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The Emergency for Research in Unexplored Fields

E. G. D. MURRAY

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The School of Hygiene, University of Montreal

JULES GILBERT

The Layman in Public Health Administration

J. C. RUTLEDGE

Cleft Lip and Cleft Palate in Ontario

ERNEST H. HIXON

**The Public Health Conference on Records
and Statistics**

HAZEL V. AUNE



INDEX to Volume 42, 1951



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The Emergency for Research in Unexplored Fields of Public Health

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IT is evident that the title I am to speak to is fantastic for a paper to be covered in a few minutes. It was chosen for me, and I have left it untouched, because, it seems to me, the ratio of this title to what I can do with it is somewhat in the same proportion as is the existing need for research to what we are able to do. I propose to contend that the need for research today is every bit as great and every bit as urgent as it ever has been in spite of the wondrous and prodigious progress that has been made in the past century.

I suppose everyone will admit that research is necessary, but I think it is important to be sure of what we mean by research. Few will disagree with the definition that it is the accumulation of accurate knowledge by investigation, though some pedants may insist that the investigation must be by verifiable experiment, which is no more than a special case. So far we are on safe ground and like all forms of security it is tediously dull. It used to be thought that research ability was gifted to the select few who were only fit to become one of those queer fish known as Professors. Those were the happy days, before the politicians realized that there is power in science and its applications, since when scientists have to a large and disquieting measure become enslaved and science is to some degree perverted to political expediency.

So it has come about, that, by exploiting the poverty of the laboratory, and through a misunderstanding of the purpose and urge of scientific investigation, the perfunctory way to achieve research is to provide grants in aid. I will not now pursue the evil potentiality of this concept as it is metastasizing in the

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budgetary policies of universities and perhaps restricting the function of other laboratories.

The concept is manifestly wrong. Research is still, and ever must be, an individual capacity and a personal absorbing enthusiasm. Work of the highest calibre, such as is important to produce, cannot be achieved by the "young man in a hurry" working merely for an easy living from nine to five and pressed by his superiors to produce two or three papers a year. The need is to select, train and encourage those most suited to the purpose.

Money should be distributed as block grants to laboratories under proven leadership, and only exceptionally to individuals. From such centres will then come those that public health laboratories need and should desire, with the qualifications and training to undertake the problems urgently requiring solution. If public health research is to be what it deserves to be, its first essential need is the best possible workers in all the diversity of its interests.

Having got the men, the first major difficulty is overcome and they are relatively easily provided with the necessary equipment and facilities, not neglecting to allow adequate time for the purpose.

The second major difficulty is to recognize and clearly define the problems they have to solve, and this is vastly more troublesome to do than the inexperienced realize. We all have a tendency to confuse our thinking by accepting some obscure word or phrase and this often turns us from understanding a situation. As an example, I think you and I know better what is meant by "Public Health and Hygiene" than we ever will understand from "Health and Social Medicine". We can so wrap up a problem in a high-sounding phrase that it becomes lost to view. Sometimes, when we give a name to a disease or coin a term for a train of circumstances, there is a tendency to think the problem is solved. In the course of about 35 years of teaching, I have learned never to use a technical term without defining its meaning, unless I were foolish enough to wish to hide my ignorance from the students.

To illustrate what I mean, I submit we are deluding ourselves when we give definite meaning to names of diseases of which we do not know the cause and in so doing we hide the urgent problem of discovering the cause. A most excellent example of deluding ourselves is the word "epidemic". We each of us think we know what we mean by it and it is not uncommon, when some disease is more than usually frequent, for its incidence to be authoritatively pronounced an epidemic or not an epidemic. Yet, and I say this with knowledge and experience, there is not one of us knows how to produce an epidemic with certainty, using what we will how we will. The complexity of factors involved in the development of an epidemic are, up to now, only dimly perceived by any of us. Still it happens that gigantic epidemics have been traced in the past to unbelievably small beginnings and their development and spread has proceeded with appalling and abrupt disaster. Here is a subject for research and one that can matter at any moment, but it is a complexity of problems, each of which must be clearly envisaged and finally co-ordinated in the light of certain knowledge.

This is not the occasion for me to list the infectious diseases whose cause we do not know, nor those whose method of spread has not been determined.

Unsuspected diseases are discovered surprisingly where they were not anticipated to exist. The influences of environmental and circumstantial contributors to ill health of all kinds are only beginning to be given significance. Vast fields, involving living beings other than man, as reservoirs, as vectors, and as susceptibles, have yet to be explored. The complexities of enzyme systems and hormone systems are rapidly assuming absorbing interest. These are no more than a very few instances indicating the need, and, the truth of the matter is, every little accretion of knowledge opens wide and deep possibilities of research, if we have the prepared understanding to recognize them. I am personally too limited in my knowledge to picture for you the future of public health, but there is an infinity of problems, and much to learn of all of them; and that means research. It must be enlightened research by the best brains we can find and encouraged by appreciation.

There is an urgent matter which I believe should engage our attention as it is bound to become of tremendous public health importance. Research has brought into use drugs and products of living cells which are becoming increasingly prominent in the management and treatment of diseases. Many of these are bringing about astonishing modifications of previously existing conditions, to such an extent that the use of these substances requires more care than has been accorded them up to now. We are beginning to recognize that antibiotics are not uniformly without their dangers and disadvantages, great as have been the benefits their use has conferred. This is not simply a clinical therapeutic problem of individual cases, but has public health significance. Witness the interference with the production of immunity in typhoid fever cases treated with Chloromycetin, resulting in an unprecedented frequency of relapses and retained susceptibility to reinfection, without any reduction of the carrier rate. Its extensive use in an outbreak of typhoid might well give rise to unprecedented problems in the management of the public health situation. Another type of antibiotic problem comes from the justifiable and intensive use of an antibiotic to treat one kind of infection, thereby promoting the development of another and different kind of infection. This is illustrated by the development of serious mycotic disease, for example, when Aureomycin is used extensively to treat a susceptible bacterial infection. Indiscriminate use of antibiotics is also inducing astonishing changes in regional bacteriology which are at times detrimental to the patient.

• Even the widening use of hormones of the ACTH type may impinge on public health in unexpected ways. Besides the seeming generalization of a bacterial infection in the treated patient, without giving rise to concomitant symptoms, there is increasing evidence to indicate the suppression of the production of immunity when these hormones are used. Who knows what this might lead to? These recitals of adverse effects and interference with results on which public health measures have been based, indicate at very least that care and control are desirable. More than that, they indicate an emergency for research to provide a basis for controls.

Besides this cautionary attitude to antibiotics, based upon certain disadvantages, I wish to draw attention to what I have thought up as a progressive beneficial possibility. The process by which the sulphonamides and antibiotics

have reduced the incidence of lobar pneumonia, in the course of effective treatment of cases, is not clear by any means. It is a most important question to investigate, for immunization failed to bring it about. It may be said, what does it matter now that it is done? Well, apart from the aggravation of not understanding the why and the how, it has a promise in what is possibly still the most urgent need in public health today, control of tuberculosis.

True, the tuberculosis rate is still steadily falling in all-well conducted communities, with certain exceptions, such as in the American Negroes, but there must be a limit to the influence of hygiene in that regard. If the effect of adequate treatment on the incidence of pneumonia could possibly be reproduced in tuberculosis, our public health approach to that disease must first be fundamentally changed. Although, admittedly, there is a growing respect for BCG and some attention is being given to other possibilities, such as using the Vole bacillus, I believe it is essential to do something more than induce a partial immunity in order to gain complete control over tuberculosis. To this end it seems possible that the lesson of pneumonia indicates that adequate bactericidal treatment of cases, particularly in regions where the tuberculosis rate is now greatly reduced, might give the *coup de grace* with great effect.

The principle is straightforward but its application presents a variety of difficulties. I firmly believe it is urgently necessary to lay the greatest possible stress on the earliest possible diagnosis of tuberculosis and with that to emphasize the extensive use of Streptomycin, and any other effective or ancillary drug, as early in the disease as we possibly can. If Streptomycin can do such a marvel as it does in tuberculous meningitis, it must be capable of even better in very early cases of more ordinary kind. It is important to anticipate fibrosis, cavity formation and the development of lesions to a degree when they come within the range of first detection by X-ray examination. Such a stage I regard as late. Herein largely lies the change required in the public health approach.

This becomes a straight applied bacteriological problem. I have known several instances of the finding of tubercle bacilli, by infinite care, when neither X-ray nor physical examination could detect anything in the case. There is need for research to improve and develop methods of diagnosis and in conjunction with this to promote cooperation with the laboratory on the part of clinicians and public health authorities. This leaves me to deplore the inadequacy of the so-called laboratories in many sanatoria and tuberculosis hospitals. It would seem that the laboratory is commonly the last and least to be considered in designing a tuberculosis service. To achieve what I believe is possible, this situation must be profoundly altered. Of all diseases, there is none more emphatically the concern of the bacteriology laboratory than is tuberculosis. It seems to me reasonable to expect that early diagnosis with adequate bactericidal treatment will not only benefit the individual patient but will bring the incidence of tuberculosis to compare with the incidence of lobar pneumonia at the present time in many places.

These observations bring out that the emergency for research is still just as great in a number of the old fields as it may be in any new field. As for unexplored fields, we need not leave our own doorstep to find them.

The public health laboratory has vast and urgent fields to investigate, and, besides providing for its prescribed routine control tests, it must be designed to do research. I often wonder why the public health laboratory is doing its utmost to creep into the field of hospital and clinical diagnostic work, in the narrowest meaning of the term. That sort of work can only be done properly with close contact with the clinician and his individual patient and it is clearly far outside the field of the public health laboratory. I hope it is not a political manoeuvre, known as "the thin edge of the wedge". I also hope it is not due to lack of inspiration and ability to define their own problems clearly. It is, to a considerable measure, due to a failure of the hospitals to do their bacteriology properly. The question has worried me a great deal and I believe the situation would be vastly improved by discouragement of public health laboratory reports as they are published now. These reports are largely a dull and uninformative enumeration of the thousands of specimens received for examination, and the importance of the laboratory would seem to be judged by the number of ciphers in its grand total of tests performed. Even the most costive-minded statistician must be bored by these figures. Substitute for this an informed discussion of problems and judge the importance of the laboratory by the range of its excursions and the depth of its penetration into the unknown or little understood influences contributing to community health.

Even the few examples I have given, in a very small part of the great range of public health, seem to me to sustain my argument that research is as urgently necessary today as ever it was, and the unknown fields are only restricted by the limitation of our power to recognize them. An intriguing feature of the results of the application of new knowledge is that the changes induced by us in our environment require ever-watchful research, whereby we may recognize and correct disadvantageous trends and develop those which are beneficial. That which seems to me hardest for humanity to learn is to keep the power knowledge gives us under the direction of those who understand its meaning and its potentialities.

The School of Hygiene of the University of Montreal: Its Program, Present and Future

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THE COMMISSION of Studies of the University of Montreal established the School of Hygiene by a resolution adopted on November 22, 1945. Doctor Armand Frappier, Director of the Institute of Microbiology and Hygiene, had succeeded in convincing the University authorities that his Institute was a suitable frame for the new school, and in convincing the Provincial authorities that they should give the financial assistance required by such a project.

On April 9, 1946, the Legislative Assembly of the Province, on the suggestion of the Honourable J. H. A. Paquette, M.D., Minister of Health, passed an act to help the University of Montreal to establish this School of Hygiene by giving an annual grant of \$40,000 for a period of twenty years. Our Provincial legislators thus created a precedent by officially subsidizing such a school. All other schools of hygiene were, I believe, established and are maintained with the assistance of private organizations. They embarked resolutely on the road which the various Foundations had cleared during the last twenty-five years and set an example for the rest of the world by meeting their responsibility toward public health in this way.

Their purpose was to make it possible for our public health personnel to receive training locally, in their own language, and in a form better adapted to their needs. At the same time this training conforms to the highest standards set by our professional associations, both Canadian and American. Under such happy auspices, the School of Hygiene, in a few short years, has made rapid progress and can even be credited with certain innovations contained in its program.

Inaugurating its activities in September 1946 with a course leading to the Diploma in Public Health, the School adapted it to the local situation by the addition of several new subjects and soon accepted dentists and veterinarians, after modifications in the curriculum to meet their needs. As early as 1949, the School organized a course for teachers, religious and lay, men and women, which leads to a Certificate in Hygiene. The quality of school health teaching, so important in itself, depends on the competence of the teachers to such an extent that a School of Hygiene should have been created even if only for this group.

Presented at a general session during the thirty-ninth annual meeting of the Canadian Public Health Association held in Montreal May 28-31, 1951, in conjunction with the annual meeting of la Société d'hygiène et de médecine préventive de la province de Québec.

In the following year, an abridged course was offered to dentists serving in local clinics. This course will become more popular when public health services can employ, as they would like to, full-time public health dentists.

An event of importance in 1949 was the integration of the School of Public Health Nursing with the School of Hygiene. This made it possible to coordinate the education of doctors and nurses, who should train together, since they are to work together. This principle had been put forward at various conventions of public health workers. Its application by the School of Hygiene was later endorsed by an official declaration of a committee of experts appointed by the World Health Organization.

During the same year, the School of Hygiene anticipated the wish of the Canadian Public Health Association by organizing, for the first time in Canada, a regular course for sanitary inspectors. Until then, inspectors could count only on the method of apprenticeship and instruction through a correspondence course.

Finally, at the request of several religious orders, the School in 1950 inaugurated a summer course for missionaries. In two six-week sessions given in two consecutive summers, it provides an introduction to first aid, personal hygiene, and public health. The medical aspects are covered by members of the faculties of medicine of McGill University and the University of Montreal, with due emphasis on tropical parasitology.

The School of Hygiene, which opened its doors in 1946 with a group of six students, now, in its fifth year, has a registration of 126 and has been elected a member of the Association of Schools of Public Health. This result, of course, could not have been attained without the valuable assistance that the School has received from various sources.

As it is a regular faculty of the University, it uses the vast and numerous resources contained in the university building. In this it is fortunate; one can hardly imagine the saving of time and money resulting from the fact that the School of Hygiene is located in this building. It is for this reason that it operates as smoothly as older schools, which were largely subsidized by Foundations and possess a rich material organization to meet their exclusive needs. Naturally, the School of Hygiene has leaned heavily upon the Institute of Microbiology and Hygiene, sharing personnel, premises and materials. This has resulted in a very close association between the two institutions. Fortunately this working relationship has been advantageous to the Institute itself, for while research expands our knowledge, teaching trains the technicians who apply it and thus brings to the nation the benefit of scientific progress.

The public health services also, particularly that of the City of Montreal, offered all their facilities to the School. They allow their experts to contribute to the teaching program; they receive the students in their local organizations as in a field-training area. There, student participation in the various activities becomes a necessary complement to the academic courses.

In return, the public health services profit by studies and research made at the School and the Institute concerning public health problems. This permits them to adapt their official program to the progress of sanitary science. As an example in the field of preventive medicine, I could point to the recent inauguration of BCG vaccination on a mass basis in numerous county health units.

The School of Hygiene meets requests from other schools for help with their problems of hygiene teaching. Finally, being a post-graduate school, it considers itself morally obligated to keep the profession informed of new developments in public health. The holding of two three-day institutes on BCG is an example of this.

The program developed during the last five years promises even more for the future, since the school aims to train other categories of personnel whose competence will depend on sound training in hygiene and public health.

In this hemisphere most courses in hospital administration are being given in schools of public health, and such an arrangement has been found very satisfactory. In order to become a true health centre, the hospital must maintain the closest relationship with the public health department, and its administration should be imbued with the concept of prevention. Hospital administrators must therefore be well grounded in preventive medicine and public health. Such training can best be obtained from a school of hygiene.

The interest of the profession has been amply demonstrated by the short summer courses given in Montreal and Quebec in the past few years and attended by hundreds of hospital workers at various levels. The need is now also fully recognized for a university course for the training of administrators of the highest responsibility. Hospital authorities can count on the School of Hygiene for this purpose as soon as they wish to embark on such a project.

As the School of Hygiene is assured of the cooperation of the Faculty of Medicine and of all the resources at the command of the University, similar considerations could be made with regard to the training of physicians to serve in industry, of clinicians in tuberculosis, of public health nutritionists, and others.

Professional training, however, is not an end in itself. It is mainly a means to serve the nation, not only by the direct application of knowledge through various services, but also by its dissemination. By its entire program, and especially its course for public health nurses, the School trains public health educators. Public health education is an essential requisite for the progress of hygiene. By its course for teachers, the School trains competent persons who will eventually hold responsible positions in the Department of Public Instruction, in our large school systems, and especially in Normal schools. There, acting as school health educators, they in turn will train thousands of school teachers to enable them to carry out correctly the official program of studies.

When all the above has become a reality, the impact of the School of Hygiene, because of its ambitious health program, will be felt in the three areas of school, public, and professional education. It will make an invaluable contribution to the enlightenment of the entire population on matters of health, thus assuring it of a larger measure of social welfare.

The Layman in the Field of Public Health Administration

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THE topic I have been assigned is a challenging one. It is broad in scope, controversial in nature. In dealing with it, I would like to stimulate your thinking without attempting to express any irrefutable conclusions.

My qualifications are these. First, in the lay field I am representative, I am a layman. Secondly, in the field of administration I am a participant. Thirdly, in the field of public health I am an observer. I mention this background quite as much to describe my limitations as to recognize my qualifications.

For a layman (and I refer to the layman here as a salaried official, not as a volunteer) to approach a group possessing such demonstrated skills in the field of public health is to experience certain misgivings. In mentioning this at the outset, I do so not so much as an excuse or an apology but because it is a very natural and significant feeling on the part of the layman who finds himself in a situation of this type.

Laymen are usually thought of in negative terms. The word 'layman' carries with it a touch of contempt. It is a word that has become a very common part of our vocabulary and it is a word that has negative implications. Frankly, as a layman, I am getting a little tired of the term as a result of being exposed to it in so many circles.

I find when I attend church that I am a layman. I feel that from a moral viewpoint I am probably regarded as a somewhat inferior being lacking the theological skills and moral philosophy of the clergy.

When I hear a group of educators speaking, I find that again I am tagged as a layman—someone lacking the pedagogical skills and knowledge of educational principles. I had an interesting experience in this regard recently when I was chairman of a small School Board. Although I occupied an elected office, although I had something to do with the raising of funds and the investment of those funds, although I participated in the employment of the teachers and staff, although I, myself, was a parent engaged in the process of raising two very lively children, yet in the teaching circles I was accepted only in a spirit of dignified acquiescence. I was a layman. And when in the course of my work I frequently find myself in the company of doctors of medicine, I again cannot escape the feeling of being a somewhat inferior being.

Presented before the Public Health Administration Section at the thirty-eighth annual meeting of the Canadian Public Health Association, held in the King Edward Hotel, Toronto, June 12-14, 1950. At that time, Mr. Rutledge was chief of the Personnel Division, Administration Branch, Department of National Health and Welfare, Ottawa.

Why should this attitude develop? Well, I suppose it is a rather natural development in a science-minded world, in a world of specialists. The scientist today stands at the pinnacle of public prestige. His position is unchallenged. The scientist today has achieved so much—the layman today knows so little. The layman or non-scientist can scarcely argue back even if he chose to. May I demonstrate this?

The other morning at breakfast my seven-year-old boy asked, "Daddy, what is the H-bomb?" Now, he is not a particularly precocious child. The question was a natural one. He had heard reference to it on the radio. I do not recall precisely how I answered his question, although my answer was, of necessity, hopelessly inadequate. I do recall, however, the thought that flashed through my mind, which was this: "Son, I have not the foggiest idea what the H-bomb is, except that I am told by the scientists that there is a good chance that it might wipe you and me out of existence." It was a frightening commentary on a science-minded world. I, as an ordinary man in the street, could not hope to comprehend the intricacies of such a weapon of destruction. I felt quite incompetent to discuss it in any terms. I accepted it without comprehending it, although its impact on the life of my family could be revolutionary.

To a greater or lesser degree in most areas of science today I have the impression that the layman is thought of in negative terms and as one who should follow willingly but dumbly and without question.

In the field of public health may I encourage you to think of the layman in positive terms rather than negative terms. I do not mean to suggest that the layman should be invited to invade the laboratory. That is ridiculous. But there are areas where his influence should be felt and where, to a large degree, it is not fully appreciated. One of these areas is the area of Administration.

Certain words in our vocabulary are used with distressing vagueness, and I feel that the very vagueness of these terms is evidence not only of a lack of precision in expression but evidence of a lack of precision in thought. I am thinking of words such as 'democracy', 'capitalism', 'communism'. Are any two people likely to agree on a precise definition of any of these words? The words come to mean different things to different people. They become coloured. We let the words do our thinking rather than simply using them to express our thoughts. And the word 'administration' is an excellent example of this type of word.

I submit that the vagueness surrounding its use is characteristic of the vagueness surrounding our thinking in the field of administration. Concerning the vagaries of its use, for example, it is interesting to note that the terms 'Executive Officer' and 'Administrative Officer' are used in quite different senses in the Public Service in Great Britain and in the Public Service in the United States and Canada. In Great Britain, the Administrative Officer is the planner, the director; the Executive Officer carries out the orders. In this country in the Public Service, frequently the Executive Officer is the planner; the Administrative Officer executes these orders. I draw this to your attention to show in a very simple yet vivid instance the differences in interpretation of the word 'administration'.

It seems to me that in the scientific fields, administration has come to be a sort of a 'catch-all', a waste paper basket, for non-scientific functions. It has

been thought of in insufficiently positive terms. To a marked degree it has been suffered as a necessary evil. Frequent examples of misunderstanding of administration come to mind.

I find a very common error is that of interpreting clerical work as administrative work. I find a surprising degree of confusion in professional circles concerning what is clerical and what is administrative work. Because certain jobs require a pen and pencil rather than a stethoscope, they are regarded as administrative. The pen and pencil is not the test nor the mark of the administrator.

I find courses on administration emphasizing techniques rather than dealing with administrative principles. I find them dealing with Acts of Parliament rather than principles of integration.

I heard a man referred to recently as a very competent administrator and as closely as I could judge this opinion was based on the knowledge the third party had of regulations. He possessed an encyclopedic knowledge of regulations. And yet my knowledge of this person suggested that he possessed to a very small degree the ability to conceive a plan, to organize and to direct. He had a good memory but few administrative skills.

Well, then, what is Administration? I know I cannot offer you any trick definition or formula but I would say this, that students in the field of Public Administration include the following factors in the area of Administration: Planning, Organizing, Staffing, Directing, Co-ordinating, Reporting, Budgeting.

I can see no reason why the layman should be disqualified in handling these elements of administration simply because he is a layman. Yet I have seen examples in each field where the layman is disqualified on the grounds that he is not a scientist.

I have seen medical doctors taxing accounts where 90 per cent of the problem involved is an accounting problem. I can appreciate that in the taxing of accounts there are a certain number of cases in which there must be brought to bear the professional weight and experience of the doctor. I think you will agree, however, that the percentage of such cases is not necessarily large.

I have seen doctors handling problems of engineering construction in connection with the erection of a hospital and yet in such instances the bulk of the problem lies in the field of engineering, in construction. The advice of the doctor is fundamental but the bulk of the supervising demands engineering skills.

I have seen medical doctors spending an extraordinary large percentage of their time on problems of personnel, of finance, of budgeting—problems in which the layman should be qualified but in which there is a demonstrated reluctance to accept him.

Why should this be the case? Well, there are various reasons. First of all, the most usual reason I hear is that the layman does not speak the language of the scientist. Here we have the implied myth that scientists are a much different breed of men. Now I will quickly admit that the educational background of the scientist differs from that of the layman, but I think you will find those qualities of intellectual interest, courage, good judgment, and imagination quite as readily in the layman as you will in the scientist. As a matter of fact, the intellectual sharpness and scientific sophistication of the scientist is frequently demonstrated only in narrow fields. Too frequently those intellectual qualities are

cast aside when he invades the area of administration. Too frequently he fails to apply those scientific disciplines to the humanities, to problems of administration. I will quickly praise the scientific skills of the professional man in his science, but I am not prepared to admit that the scientist automatically carries those into the field of administration to the same marked degree.

Secondly, the layman himself is much to blame for his failure to be accepted in certain fields of public administration. As I mentioned at the outset, the layman has a certain feeling of inferiority in this science-minded world. His imagination is stupefied by the wonders of science and he is duly humble. I think it is only natural that the professional man should come to accept the layman's opinion of himself.

A third reason lies in the subtle effect of the educational process. I think our educational process leads to a false sense of intellectual superiority which closes the minds of many to the powers and merits of others, either of inferior formal education or of education in other fields. It leads to a serious misjudgment of the importance of personal experience and of deliberately acquiring it. Many of us have a hard time discovering that mental skill is often a superior substitute for mental toil, though we show this perfectly in terms of physical work.

A fourth reason underlying failure to properly use the layman is one which I have referred to by implication earlier; that is, a failure to identify the nature of the work in question. I would like to mention the failure to distinguish between technical work, clerical work, administrative work and work requiring the skills of the professional man. Too frequently the professional man in a senior post finds himself doing clerical work and non-professional jobs without being aware that for him to do so is an extravagance. Not only that, but he frequently lacks the skill to do some of those routine clerical jobs efficiently. Too frequently the professional man applying himself to a clerical job performs it in only mediocre fashion. This is in no way a reflection on his professional competence.

Possibly I can demonstrate this from another field. I recall that in the Navy with the introduction during the last war of radar it was originally thought that a radar operator should be a highly skilled person. Through experience it was found, however, that the person of no more than average intelligence performed a much more competent job sitting in front of a radar screen than did the imaginative, highly trained individual. Here was a field in which imagination was a liability, not an asset.

I submit that it is very important that we distinguish between the professional job, the administrative job, and the clerical or technical job. Unfortunately, by a rather subtle process, in too many instances the differences have become obscured. Too frequently we send a 5-ton truck to do a 1-ton job.

Finally, there is the natural reluctance on the part of a professional group to accept others experienced in other fields. This is found in all areas. I recall that when Mr. Donald Gordon, a superb administrator, was appointed president of the Canadian National Railway, there was considerable criticism that there should have been appointed to such a post a man who had not spent a lifetime in the railway industry. There was a natural reluctance to accept him in some circles—a reluctance which I understand has been dispelled by his performance.

When I introduced this subject, I pointed out that the most I could do in a few minutes was possibly to stimulate your thinking; I hope I have succeeded. I would, however, like to express a couple of conclusions. The first is the importance of recognizing administration not as a catch-all for minor non-scientific and junior clerical jobs, but as an area involving high skills in integration and co-ordination. To handle skilfully an administrative problem is as much the mark of the civilized man as the ingenious removal of a diseased organ.

I would also like to say, in conclusion, that one can hardly contemplate our civilized society today with its complexity, with its elaboration of technique, without realizing that in such a society the increasing specialization engenders the need for that type of mind that seeks the net result, the net balance, the interest of all. In this I think the layman can make a valuable contribution.

A Study of the Incidence of Cleft Lip and Cleft Palate in Ontario

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FOR various reasons it is often desirable to obtain a reliable estimate of the frequency of the cleft lip (harelip)* and cleft palate births in a given geographic area. Such an estimate would provide various government and philanthropic agencies with a basis for determining the amount of economic aid required for rehabilitation of the children with cleft lip and/or cleft palate. Of more importance is the aid such figures would supply to studies concerned with the manner of inheritance and with different environmental factors. Such an estimate has never before been attempted in Canada.

TABLE I
ESTIMATES OF THE FREQUENCY OF CLEFT LIP AND CLEFT PALATE

Year	Location	Source of Information	No. of Individuals with Harelip and Cleft Palate	Sample Size	Frequency per 1,000 Individuals of Sample	Ratio of Individuals with Clefts to Population Studied
1864	St. Petersburg, Russia ¹	Foundling hospital	118	180,000	.66	1:1525
1908	London, England ²	Hospital admissions	39	67,945	.57	1:1742
1920	U.S.A. ³	Draftees 1918-19	1,466	2,510,791	.53	1:1880
1926	Baltimore, U.S.A. ⁴	Birth records	24	28,085	.85	1:1170
		White	17	15,565	1.09	1:915
		Negro	7	12,550	.56	1:1788
1931	Lubeck, Germany ¹	Pop. survey	28	34,000	.82	1:1214
1934	Holland ¹	Birth records	102	102,823	.99	1:1000
1934	Hamburg, Germany ¹	"Babies"	16	15,270	1.05	1:954
1928-37	Gothenberg, Sweden ¹	Birth records	74	47,200	1.57	1:638
1910-40	Denmark ¹	Birth records	28	27,000	1.04	1:960
		All births	193	128,306	1.50	1:665
		Live births	175	121,102	1.45	1:690
1940	Hawaii ⁵	Birth records	35	18,024	1.98	1:550
1942	Pennsylvania ⁶	Birth records	250	202,501	1.23	1:800
1935-44	Wisconsin ⁷	Birth records	736	567,504	1.30	1:770
1948-50	Pennsylvania ⁸	Birth records	766	583,690	1.31	1:762
1943-49	Ontario	Surgical records	695	655,322	1.06	1:943

This study is a portion of a report entitled "Health Aspects of Cleft Lip and Cleft Palate" which was made possible by a National Health Grant.

*Though, strictly speaking, harelip refers to the rare midline cleft, as in a rabbit, the term has been used interchangeably with cleft lip, particularly when the distinction between cleft lip and cleft palate is to be noted.

All the studies on the incidence of cleft lip and cleft palate known to the author have been abstracted and are presented in Table I. The general trend shows an increased rate for the last two decades. This may be due to better medical care which today gives infants with harelip and cleft palate an excellent chance of survival to the age when they can raise offspring. More likely, the methods of collecting data for the recent studies are more thorough.

Unlike diseases, congenital malformations can be diagnosed at birth—a procedure which permits direct determination of natal frequency. In some areas, such as Denmark, Hawaii, Pennsylvania, and Wisconsin, the reporting of congenital malformations on the birth records is required by law. Thus the entire newborn harelip and cleft palate population can be tabulated. Reliable figures can be obtained without encountering some of the major problems of a sampling procedure.

As Ontario does not require the reporting of congenital malformations on the birth records, an attempt was made to determine from hospital records the incidence of cleft lip and cleft palate at birth. Letters were sent to the 81 largest hospitals in Ontario. The information asked for was the number of children born in the hospitals with harelip and/or cleft palate for the years 1947, 1948, and 1949. Replies were received from 63 of these hospitals, but 30 did not record such information. Because it was not determined whether any of the hospitals recorded the presence of clefts among the stillborn, the number of infants with clefts was compared with the total number of births in the same hospitals for the three-year period.

TABLE II
INCIDENCE AT BIRTH OF CLEFT LIP AND CLEFT PALATE
AS DETERMINED FROM 33 HOSPITALS IN ONTARIO

Year	Total Births	No. with Clefts	Rate per 1,000 Births	No. of Births per Cleft-palate Birth
1947	29,387	29	.987	1,013
1948	29,354	36	1.226	815
1949	33,671	34	1.010	990
Total	92,415	99	1.071	925
Total Live Births	90,459	99	1.095	922

When the number of harelip and cleft palate births was compared with the number of live births, the rate increased slightly, from 1.07 to 1.09 per 1,000 births.

These figures are probably low estimates because where the reporting of congenital malformations is not compulsory it is quite probable that a few cases were not recorded. That this was the case is substantiated by another approach to the problem.

For this aspect of the study, all Department of Health Hospital Admission Forms (Form 226) were screened for 1949 to determine in which hospitals harelip and cleft-palate operations were performed. Eleven such hospitals were located in Ontario. Each of these hospitals was visited. The case histories of the patients appearing for harelip and cleft-palate operations were examined to determine which patients were appearing for primary operations and which for

secondary operations for the years 1943-1949 inclusive. The number appearing for a primary operation was tabulated and compared with the number of live births in Ontario for the same period. The results are given in Table III.

TABLE III

NUMBER OF INDIVIDUALS APPEARING AT 11 HOSPITALS IN ONTARIO FOR CLEFT-LIP AND CLEFT-PALATE OPERATIONS FOR THE YEARS 1943-1949

	Individuals with Clefts	Live Births In Ontario	Rate per 1,000 Live Births
Male	442	337,208	1.311
Female	253	318,124	.795
Total	695	655,332	1.06

The rate obtained is not comparable to most previous studies where the rate was obtained at birth. The median age for the first lip operation (81% of the group) was 3 months and the median age of the first palate operation (19% of the group) was 18 months. Ivy⁸ has estimated that 8% of the live-born infants with clefts die within the first month of life, and Fogh-Andersen¹ found that 12% of the live-born Danish infants with clefts die within 10 days of birth. Though the number of cleft-lip and cleft-palate infants in Ontario surviving to require surgery is 1.06 per 1,000 live births, the rate of birth is probably similar to the figures obtained from birth records in other areas, i.e. approximately 1.3 per 1,000 births.

Information regarding morphology was obtained for 634 cases. Of these 31% had only the harelip and 19% only the cleft palate, while 50% had combined lip and palatal clefts.

TABLE IV
TYPES OF CLEFTS FOUND IN A STUDY OF 634 CASE HISTORIES

	Cleft Lip	Cleft Lip and Cleft Palate	Cleft Palate
Left	99 (16%)	130 (20%)	*
Right	75 (12%)	80 (13%)	*
Bilateral	21 (.3%)	106 (17%)	*
Total	195 (31%)	316 (50%)	123 (19%)

Lip involvements were nearly twice as frequent in males as in females, for both the isolated harelip and the combined harelip and cleft palate. This is in accord with the two other studies presenting this breakdown. However, for the isolated clefts of the palate, the female ratio was nearer 1:1 for Ontario than the 2:1 ratio of the other two studies. No explanation can be offered.

TABLE V
SEX DISTRIBUTION BY TYPE OF CLEFT

	Number	Male	Female
HARELIP			
Denmark ¹	138	65%	35%
Pennsylvania ⁸	229	70%	30%
Ontario	195	65%	35%
HARELIP & CLEFT PALATE			
Denmark ¹	360	71%	29%
Pennsylvania ⁸	356	64%	36%
Ontario	316	63%	37%
CLEFT PALATE			
Denmark ¹	127	34%	66%
Pennsylvania ⁸	181	38%	62%
Ontario	123	45%	55%

SUMMARY

1. For the years 1943-1949 inclusive, 442 male and 253 female infants appeared in 11 Ontario hospitals for primary harelip and cleft-palate operations. There were 655,332 live births in Ontario for this period, giving a figure of 1.06 infants with clefts (at age of operation) per 1,000 live births. Because of the high death rate among infants with clefts in the first few months of life before operation, the rate at birth in Ontario may be assumed to be near that obtained in other areas where it is possible to calculate the rate at birth with accuracy, i.e. approximately 1.3 per 1,000 live births.

2. Thirty-one per cent of all clefts involved the lip only, 19% the palate only, and 50% the lip and palate.

3. Nearly twice as many males as females had clefts involving the lip, either as isolated harelip or harelip combined with cleft palate. The ratio of the number of females (67) to males (56) with isolated cleft palate is different from the 2:1 ratio obtained in two other studies.

4. To provide figures of value to geneticists in Ontario, this study should be repeated when and if a better source of material becomes available.

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The Public Health Conference on Records and Statistics

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MOST things that are good are very simple—not in the dull or stupid sense, but simple in the sense of being down to earth. Public health workers in the United States who are concerned with vital records and vital statistics are very proud of a small organization that is based on quite a simple idea—the belief that the best organization is the one that brings out the greatest participation of its members.

Another way of saying the same thing is that participation is a way of working that brings out the best in people. If people can get together on a common meeting ground, they can plan a positive, constructive program that belongs to everybody, and on which they may be willing to do real work the year round, because it is in fact their own program.

I have begun with this little excursion into homespun organizational philosophy because it represents a central principle of the Public Health Conference on Records and Statistics. Without this underlying concept—the conviction that people of somewhat different interests can find a common meeting ground, and actively participate in devising and carrying out a common program—there would be little else in the organization that would merit formal discussion so far from home.

The Conference itself is a permanent organization that provides a mechanism for the development and improvement of public health records and statistics. Counting from the date registered on its birth certificate, it is barely two years old, although—as I shall describe later—it was probably in gestation for a much longer period. Its primary purpose is to bring State registrars, vital statisticians, and other public health statisticians into closer working relationship. Our belief is that these groups can profit through interchange of experience and knowledge, that many of the problems of each can best be solved through cooperative effort.

Because of the importance of vital records and statistics to health administration at all levels of government, the Conference is formally sponsored by the United States Public Health Service. It is actively assisted, advised, and en-

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couraged by the National Office of Vital Statistics, which has been a Public Health Service component since its transfer from the Bureau of the Census in 1946.

The Conference holds an annual meeting which is attended by representatives from all States and territories. Both the public health statistical interests and those of vital records and vital statistics are represented. At the third annual meeting, which was held in Washington, D.C., April 23-26, there were representatives from 52 of the 57 registration areas, which include the 48 States, four territories, and five cities in which registration is conducted separately from the State systems. Two representatives came from most of the areas. In addition, there were representatives from Canada, several Latin American countries, and from a number of interested Federal agencies. Several schools of public health, the American Medical Association, the American Dental Association, and the American Heart Association were also represented. Altogether, 200 people participated.

Before we take a closer look at the Conference itself, at its mode of operation and its specialized problems, it would be well to go back a few years to examine the area of need that the Conference was designed to fill. In the early days, the desirability of a closer working relationship between the registrar and the public health statistician was not generally recognized. There were and still are a number of organizations set up to accommodate various needs of either group. All of them are interested in certain phases of the records and statistics of public health, and as I outline them I want to point up not only their special interests but to indicate the general area that none of them specifically covers. For it was this vacuum—the lack of permanent organization to provide a meeting ground for the registrar and the public health statistician—that required the building of a special structure.

The American Statistical Association, with which you are all familiar, has as its purpose the improvement of basic statistical data and statistical methods in many fields of knowledge. It fosters contact and discussion among people professionally concerned with statistical problems and methods, and encourages the use of statistics in research and practical affairs. But it is the professional association of a fairly specialized discipline. Its members are statisticians with a common background of academic training and experience; they speak a technical language, and when they meet they are concerned to a great extent with the technical problems of their craft. Certainly the common ground of registrars and health statisticians, even with the utmost of good will, could not be found here.

The Population Association of America seeks to improve and advance the human race through research in human population problems. Vital statistics is therefore a major concern, but the Association's domain is the whole wide world, and its focus is necessarily too broad for specific consideration of local or State record and statistics problems.

One of the most useful organizations to the public health statistician is, of course, the Statistics Section of the American Public Health Association. Originally this Section set out to afford a meeting ground for registration officials, vital statisticians, and public health statisticians in general, but its

method of organization was not ideally suited to this purpose. In 1933, the registration executives broke away to form an association of their own. In recent years the functions of the Section have been centred around the presentation and discussion of scientific papers at the annual A.P.H.A. meetings, and around panel discussions of problems of fairly broad interest. By its nature, the Section cannot undertake detailed work on the specific problems that require joint effort by registrars and public health statisticians, nor can it discuss such problems in any great detail at the annual meetings. Its great usefulness in respect to these groups is to serve as a medium through which they can interpret their programs in vital and health statistics to the other members of the public health team, as represented by the A.P.H.A. membership as a whole.

A moment ago, I mentioned that the registrars since 1933 have been grouped together in the American Association of Registration Executives. This association enables State registrars to exchange views on registration and administrative problems. Its unique value to the registrars is due to the selectivity of membership. As the trade guild of the registrar, it speaks only from the vantage point of registration and records. The registrars have felt the need to preserve an organization of their own, intact and undiluted by an influx of statistical and other non-registration personnel. Although the registrars to some extent recognized that there was an acute need for cooperative discussion, working relationship, and concerted action by registration personnel and health statisticians, it was well understood that this need would require an organization of an entirely different type.

In all probability the need for such an organization was felt most keenly by the National Office of Vital Statistics, the Federal agency whose classic function is to collect, tabulate, analyze, and publish the vital statistics of the United States. This function of course requires the National Office to provide assistance to States in improving their vital records and statistics. Conclusive arrangements have evolved over the years, standardization of forms and laws has been encouraged and, to a great extent, achieved.

The objectives of the Office have been defined as:

1. To make available accurate and timely official national vital and health statistics, designed to serve public health and other scientific, public, governmental, and international programs.
2. To bring to maturity a coordinated system of vital records, capable of serving efficiently the record and statistical needs of the individual and of cities, counties, States, the nation, and international organizations.
3. To encourage, through cooperative arrangements, integrated record and statistical programs in the fields of health, welfare, and demography.
4. To approach these goals step by step, building upon the existing structure, through strengthening registration and statistical programs in local, State, and national offices, eliminating unnecessary duplication of effort.

Objective number 4 has, of course, required the National Office of Vital Statistics to develop and maintain a close working relationship with the State registration executives. Consulting assistance has long been freely given in the

solution of individual state registration problems. But an approach to such problems, on a state-by-state basis, is at best inefficient.

It was felt that the Federal agency could best offer its consultative service to the registrars meeting as a group, in addition to the individual service throughout the year. During the 1930's, this feeling resulted in a series of work-conference meetings, on a regional and a national basis, with the sponsorship and financial help of the Federal government. At these meetings, the registration executives had their first opportunity to pool their own knowledge and that of the Federal consultants in a joint attack on the many complex problems of vital registration. At this stage, statisticians as such were not brought in, although of course some of the registrars were themselves statistics-minded. I might also point out that the work conferences, though fairly successful, were make-shift in character. There was no permanent organization. These were simply annual working meetings, called together by a Federal agency.

After the third such conference in 1942, further meetings were banned because of wartime travel restrictions. In the face of unprecedented demands for vital records, and with a host of other wartime problems clamoring for solution, it was necessary to form, at least on a limited scale, some sort of workable mechanism. A new organization, the Council on Vital Records and Vital Statistics, was created in 1944, and consisted of seven regional representatives elected by the registration executives, and of the President and the Secretary of the Registrars' Association, and two Federal officials. From time to time, the regional representatives called regional meetings, and despite the great limitations of these stopgap mechanisms, they were fairly representative of the state registration and vital statistics interests.

The Council proved so useful that it was continued even after the Annual Work Conference of the National Office of Vital Statistics was resumed in 1947. Through the Conference and the Council, and in close cooperation with the Registrars' Association and the Statistics Section of the American Public Health Association, vital record and statistics problems of an interstate and national character were handled with a fair degree of adequacy. With all these organizations working together, there were certainly joint activities of a high order. But from a public health viewpoint, from the command viewpoint of the health administrator at all levels, there were still serious shortcomings.

The question was, how could the flow of statistical data be organized so as to provide the users of statistics with the data they needed to plan, control, and evaluate public health programs? How could these data provide a complete, co-ordinated picture of health problems and progress both for the nation as a whole and its component parts—the States and the local health units?

As seen at the time—this was approximately 1948—there were three broad gaps in health statistics:

First, there was a great gap between the recognized statistical needs of public health programs and the available statistical services. The factual basis for effective program planning was inadequate and generally late.

Second, as categorical health programs multiplied in number and extent, health administrators felt an acute need for coordinated statistics that could be

used to weigh one level of health needs against another, and to compare the levels of progress in the various programs.

Third, there was a substantial gap between the high degree of proficiency to which general statistical theory and techniques had advanced and the application of those techniques to the practical needs of public health. Although statistical tools of high precision quality were available for use, the methodology actually employed in most areas was still quite primitive and rule-of-thumb.

Obviously, none of these major gaps could be filled overnight or by any easy device. It was necessary to devise permanent mechanisms for the long pull. There were at least four indispensable elements:

1. A more effective means of improving State and local vital registration and vital statistics. It is a truism that no statistics can be more valid than the data from which they are compiled. The variety of records handled by the registration executive of course serve basic needs of individuals—when they start school, begin work, enter the armed forces, marry, apply for retirement benefits, and so on. Equally important, these records—provided they are accurate, uniform, and complete—lend themselves to statistical treatment. The resulting analyses are an essential part of the health director's stock-in-trade for program planning and evaluation. Neglect or isolation of the registrar therefore stultifies the entire public health effort.
2. Along with the classic vital records—births, deaths, marriages and divorces—there was a clear need to establish an effective local morbidity reporting mechanism, and to develop local health statistics based on current knowledge of the characteristics and distribution of the local population. Disease control and the active promotion of public health are dependent on full and up-to-date knowledge of illness and health among a specific population.
3. In terms of the job ahead, there was a great dearth of adequately trained personnel. The development of a training program was needed for effective staffing of the statistical office.
4. Of paramount importance in the filling of any of these needs was the early development of a public health working conference and committee mechanism to unite the skills and experience of all those producing public health statistics. This meant getting registration executives, vital statisticians, and public health statisticians, from all of the registration areas, into a conference-type organization that would function on a permanent basis.

This last essential was finally achieved on May 17, 1949, when the Public Health Conference on Records and Statistics was formally launched. It was essentially the culmination and fulfillment of organization and work-methods that had been under development for some time in the Council and the Work Conferences. As already indicated, however, its membership and scope were considerably broadened beyond those of its two predecessors. Of special importance was the broadening of its base to include the whole field of public health statistics in addition to that of vital records and vital statistics.

During 1948, prior to the formal launching of the Conference, successive drafts of by-laws were developed and modified, and it was not until the fourth draft that the majority approval was obtained. This draft was submitted to, and approved by, the Association of State and Territorial Health Officers.

Such action was by no means a perfunctory or courtesy matter. The Health Officers Association, by terms of its own Constitution, is empowered to "consider any policy of any public or private agency dealing with any matter pertaining to public health which may affect the administration of the department of health

of any state, territory, or possession of the United States, especially in its interstate or Federal relationships." Every action taken by the Public Health Conference is submitted to the annual meeting of the health officers for approval. This is a most salutary requirement, since it repeatedly drives home the fact that public health registration and statistics are not conducted in an ivory tower. It is well to be reminded that their purposes and usefulness are bound up with the aims of the State and local department of health.

There is no need to speak at length on the Conference bylaws, but I do want to read their intent, verbatim:

1. To establish a representative technical organization which will give full opportunity for free discussion and decision by group action on problems of vital registration, and vital and public health statistics;
2. To recognize fully the need for a close working relationship between the registrar and public health statistician;
3. To harmonize local, State and Federal viewpoints in the planning and instrumentation of programs in these fields.

The purpose, as contained in the bylaws, reads:

"The Conference is an organization providing representation for all phases of public health statistical activities (includes registration, collection, tabulation, analysis, and interpretation) of each State, territory, independent registration area, and the Public Health Service. It will serve as a medium for the interchange of information and viewpoints and for the development and promotion of procedures relating to all phases of public health statistical activities."

Membership in the Conference includes a representative of the registration and of the statistical activities of each State, territory and independent registration area, appointed by the health officer and/or other appropriate administrative officer in charge of these activities.

An executive committee, called the Council, represents the Conference in periods between the annual meetings and handles the "housekeeping" chores of the organization.

Much of the work of the Conference is carried on through two broad committees, one on registration and one on statistics. All members, according to their choice, serve on one or the other of these two committees. Each committee in turn is subdivided into a number of smaller Working Groups, which in effect are sub-committees set up to explore and make recommendations in specific subject-matter areas. The chairmen of the two Conference committees assist in the planning and coordination of their work. Just as each member serves on only one broad committee, he serves on only one Working Group, so that his energies are concentrated on one specific set of problems at a time.

The areas in which each Working Group operates are reviewed each year at the annual meeting. Since there are always more subjects requiring attention than there are groups to work on them, the two full committees review topics proposed by the groups on a rank-order basis, for presentation to the entire Conference and Council for decision.

Once a problem is assigned, the group defines it, outlines an appropriate method of operation, undertakes the necessary research, calls in expert consultation from the Federal government and from the universities, and prepares its

findings and recommendations in report form. After the report has been presented to the full committee, it goes before the Conference general session for approval or modification. In this way, every Conference member contributes a great deal to some of the decisions, but shares in all of them.

This plan of operation permits staff work on common problems to be apportioned among the available technical personnel of all the health statistics agencies. The unique advantage of the plan lies in its capacity for combining theoretical expertness and practical considerations. This comes from the fact that those who direct the planning, and do a large part of the work, are responsible executives who must live with the decisions and carry them out in practice.

When a Working Group reaches agreement on the solution of a problem, or on ways and means for achieving more uniformity in registration practices or comparability of data, endorsement of their recommendation by the Conference carries unquestionable weight in nation-wide adoption. For instance, the 1949 revision of the recommended standard certificates of birth, death and fetal death was much more widely adopted by the States than ever before. A further example is the nation-wide adoption by the states of the item "weight at birth" as an integral part of the revised live-birth certificate. Comprehensive studies on factors related to prematurity are now feasible for the first time.

Even though agreement or solution of some of the broad subjects may be impossible or require years to attain, the problem may be defined through study, and frequently a practical degree of uniformity in State practice is reached on certain essential phases. For example, although a Working Group has been unable to come to complete agreement on the specific technique to be used in correcting vital records, agreement has been reached on such recommendations as (1) original entries should remain legible, (2) date and authority for corrections should be clearly indicated on the record or amendment, (3) certified copies of corrected records should show the original entries, the corrections, and the date and authority on which corrections were made, and (4) when in the discretion of the registrar, documentary evidence is required in the process of corrections, evidentiary standards similar to those for delayed registration should be observed.

Occasionally, so-called solved problems do not stay solved. Changing times and knowledge gained through practical experience may suggest a re-evaluation. The delayed registration of births is a subject in point. A statement of minimum standards for filing delayed registrations was recommended and adopted in 1941. On the basis of experience gained by registration executives in the review of evidence, and of the procedures relating to the filing of a delayed certificate of birth, the subject has been re-opened. At present, there is before the Conference for consideration and action the Working Group's recommendation that the 1941 standards be revised in keeping with a new set of proposed principles and minimum standards.

At the 1951 Conference meeting, 12 working groups were approved for the coming year, 5 in the registration committee and 7 in the statistics committee.

As an example of how a group functions in registration problems, the working group on marriage and divorce has defined as its long-range objective the

"establishment and maintenance of a centralized marriage and divorce registration system in the United States, utilizing standard forms and uniform registration practices." At present, not all States have centralized marriage and divorce registration, and there is a wide variation in present policies of collecting marriage and divorce data. How can the group help in the effort toward standardization? Obviously it cannot all be done at once, so their first function is to determine the tasks to be performed, and rank-order them so that first things can be tackled first. This done, they have defined as their objective for the coming year the re-draft and adoption of a statement of policy on the registration of marriage and divorce, and the development of a detailed manual of practices and procedures for the guidance of States considering the initiation or revision of centralized marriage and divorce records. We need not dwell here on the hours of spade work that must be spent in the solution of such details as the design of acceptable standard certificate forms, determination of advisability of creating registration areas, development of criteria for admission to such areas if created, and so on; but these are very real problems on which this Working Group can render valuable assistance.

As an example of the functioning of a statistics committee group, we may consider the one on natality statistics. This group has defined as its long-range objective the development, evaluation and improvement of State and Federal birth statistics. Areas of work to attain those objectives have been further broken down to include: (1) technical aspects of natality statistics such as definitions, standards, collection of classification methods, and analyses; (2) development of comparable national, State, and local statistics on factors related to immaturity and neonatal mortality; (3) implementing the new definitions of fetal death and live birth and improving the reporting on fetal deaths; and (4) use of the hospital record in obtaining supplemental medical information concerning the birth.

During the past year, some of the accomplishments of this group were the preparation and distribution of a document on "recommendations for developing comparable statistics on prematurely born infants and neonatal mortality," and surveys on the possible activation and content of a system for national collection of state-tabulated data on matched birth and neonatal death records. Some of the plans for the coming year include: widespread distribution (to hospitals, physicians, etc.) of a revised version of a gestation calendar for computing length of pregnancy in weeks, and procurement of opinions from official and non-official medical health agencies on the possibilities of giving effect to the accepted definition of fetal deaths by amendment of the statutes and regulations governing the registration of fetal deaths.

In addition to this work on marriage and divorce records and natality statistics, the following subjects have been approved for working group activity during the coming year:

Registration will include:

- Promoting and testing completeness of registration
- Confidentiality of vital records
- Office methodology
- Revision of the model vital statistics law

Statistics activities will include:

Mortality	Population
Morbidity	Program registers
Service statistics	General illness

At the beginning of this talk, I tried to give expression to the guiding philosophy of the Public Health Conference—the belief that the success of a working organization depends on the amount of participation by its members. The Conference has already demonstrated the value of this concept. The Conference technique has enabled people of diverse interests to work out joint solutions of complex problems that overlapped or impinged on several fields of interest. In place of approving some program of action developed by the Federal agency, and then going back to the states and forgetting about it, they have wrestled with the problems themselves, and evolved solutions based on their own hard work and voluntary agreement.

In health records and statistics, it is of great importance to obtain national agreement—and the Conference has undoubtedly speeded up this process many fold. But of even greater importance than getting national agreement is to select and deal with the right problems. The right problems are not necessarily those that loom largest in Washington but those that emerge from the States and are brought into the Conference from the grass roots. Planning the course of the Conference is done by decision of the members. They select the problems, they participate in the research and the thinking, their pros and cons produce decisions and agreements for which they feel responsible. The result is not merely agreement, but a united course of action that is more likely to be put into effect back home.

The enthusiasm generated by the Conference has induced many of the regions to hold sub-conferences, on their own initiative and at their own expense. At first, for the most part, these meetings rehashed, redigested, and worked out regional points of view on actions taken nationally. But more and more they have tended to raise problems of their own, to be submitted later to the national Conference for consideration.

The growing success of the Conference has also changed the emphasis and direction of consultative work by technicians from the National Office of Vital Statistics. Much of the energy of the National Office, which formerly went into spot assistance to State registrar offices, now goes into staff assistance to the Conference and particularly to its Working Groups. The result has been not only greater efficiency but also less dependence by the States on the National Office advice.

We in the National Office of Vital Statistics are quite proud of the Conference, and of the part we played in helping it get started. For the first time, the field of public health records and statistics has an officially recognized organization that can offer statistical aid and counsel to the planners and directors of public health programs. The Conference is producing combined Federal-State cooperation in the planning stage of such programs. It represents a major step towards improvement of health records and statistics of the local, State, and Federal health agencies.

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TRENDS SHOWN BY THE 1951 CENSUS

ALTHOUGH the Ninth Decennial Census of Canada was conducted only a few months ago, in June of this year, already the Dominion Bureau of Statistics has been able to supply a preliminary statement of population trends. This is an outstanding achievement.

Through careful study of the information to be sought, the set-up of the documents, and the collection and processing of the data, important savings were made, without sacrificing accuracy and completeness or delaying publication of the results. In developing new methods for this year's Census, consideration was given both to the mechanical aids which could be utilized and to the organization which would be best suited to the collection and processing of the data. The most noteworthy innovation, on the mechanical side, was the application of principles which enabled all the information about a person to be converted to a punch card mechanically. This is the most remarkable single mechanical development in the two hundred and eighty-five years in which the Census has been taken in Canada. In this year's Census, the main difference from traditional methods of census-taking was the decentralization of the major part of the office work, which was done in six regional centres across Canada instead of in Ottawa as in the past. Through this planning and organization, a saving of several million dollars has been effected, with the result that although the 1951 Census covered a population one-fifth larger, the cost has not been much greater than for the Census of 1941. In the past, usually three or four years were required before the job was completed. The objective of the Bureau, in planning this year's Census, was to cut the time in half.

Although the task of compiling the data is still in the tabulation stage, preliminary results already indicate some of the population trends to be revealed by this most recent stock-taking. The material available at the moment gives a picture of the changes which have occurred in the total numbers and distribution of Canada's population since 1941.

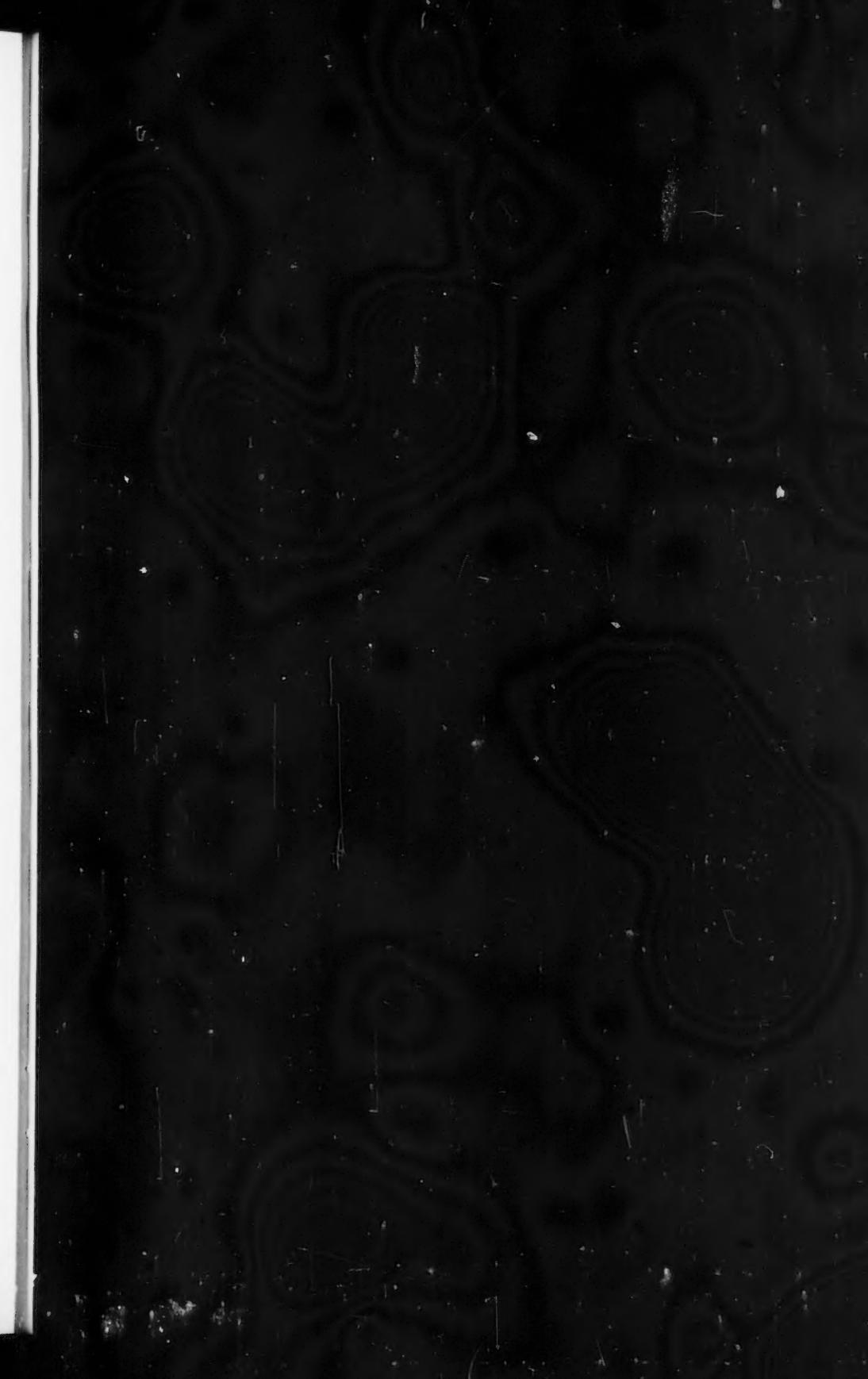
Canada in 1951 has close to two and one-half million more people within her boundaries than a decade ago. The cities are still crowded and growing more

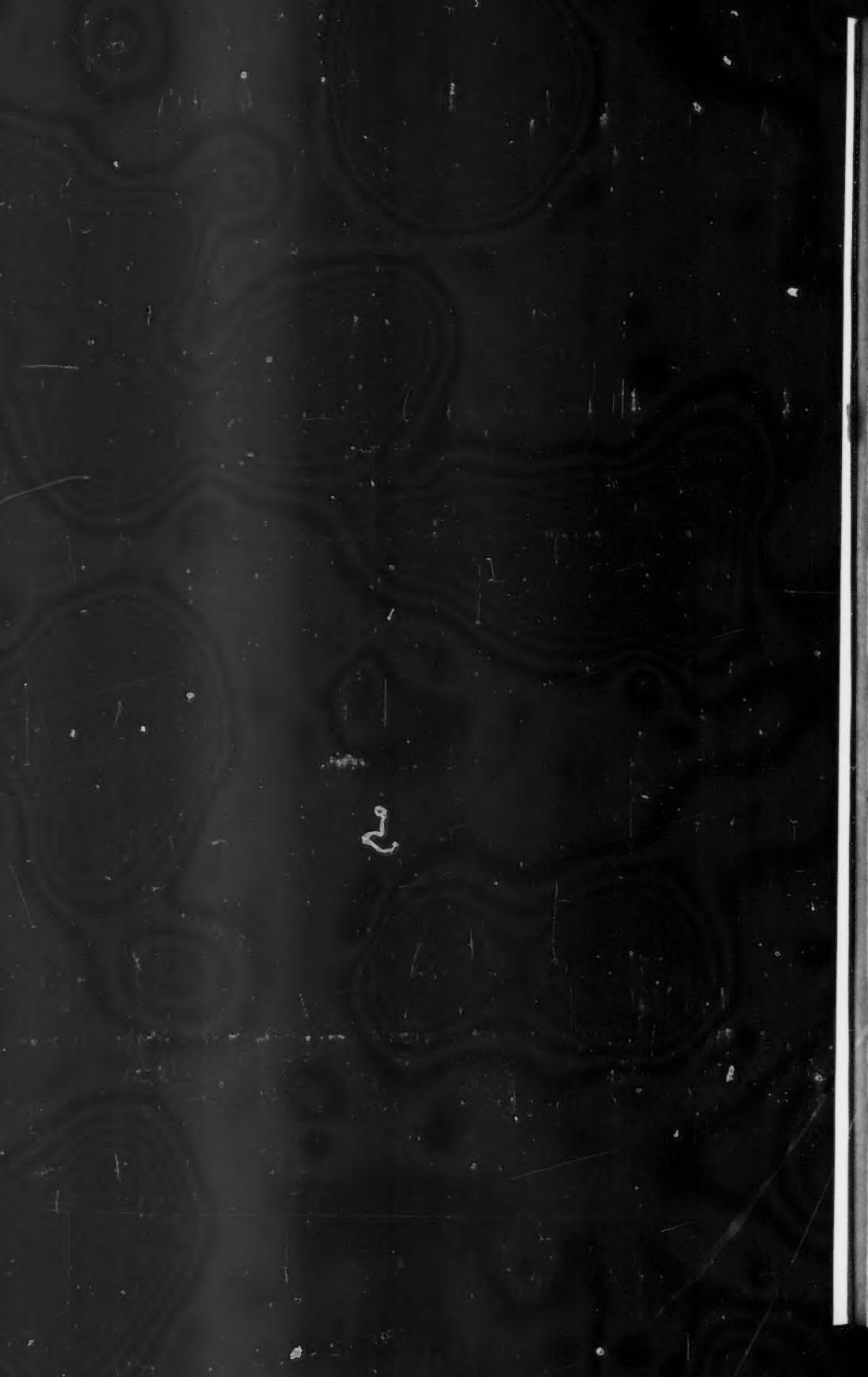
populated. A more impressive fact, and one which gives rise to a host of problems of a different sort, is the phenomenal rate at which the populations of the larger centres have spilled over and filled the surrounding countryside with urban dwellers. Remarkable, too, has been the growth of some of the smaller industrialized cities and towns such as Arvida, Noranda and Sarnia, and the development of the Northwest and the oil areas of Alberta of which Edmonton is the key city.

On the debit side are the losses in population suffered by many of Canada's rural localities. Despite such mitigating factors as the resumption of immigration, the high rate of new family formation, and the increased birth rates, the unprecedented movements of Canada's population have worked against the rural areas. Particularly is this to be noticed in the Prairie Provinces, where the trend to increased mechanization of agriculture, and fewer and larger farms, has resulted in the exodus of thousands from the rural parts to other provinces and to the more populated sections of the Prairies themselves. Some have gone to industrial employment and others are living in the urban areas while operating their farms nearby.

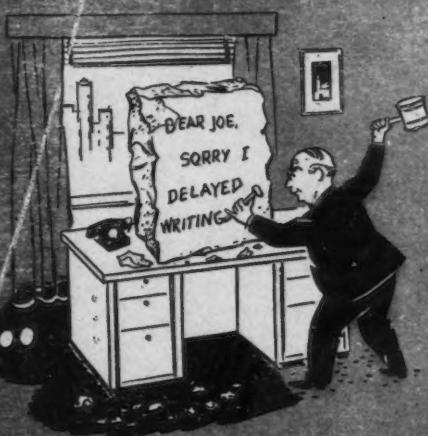
A glance at the total for the country as a whole shows that Canada has increased by about 21 per cent. However, some 350,000 new citizens were gained by the entry of Newfoundland into Confederation, and exclusive of this the net increase of population in the remainder of the country was about 18 per cent. The Maritime Provinces added 10 per cent to their population since 1941. Quebec and Ontario more than kept pace with the country as a whole, with increases of 20 per cent over the decade. Striking differences are apparent in the rate of growth of the three Prairie Provinces, with Manitoba gaining 6 per cent, Saskatchewan losing 7 per cent, and Alberta increasing by 18 per cent. It is of interest that almost all of Saskatchewan's net decline took place between 1941 and 1946, while Alberta's net gain occurred in the years between 1946 and 1951. British Columbia registered a gain of more than 40 per cent over the decade, to lead all the Provinces.

The establishing of the Dominion Bureau of Statistics shortly after the close of the first world war has proved to be one of the important developments in the Federal Government. Mr. Herbert Marshall, Dominion Statistician, is giving most effective leadership, and the bringing together, in one bureau, of all statistical services has made possible the appointment of an outstanding staff. The new building for the Bureau in Ottawa is nearing completion and will provide the facilities so urgently needed for its very extensive work. In many ways the Bureau is co-operating with the Technical Assistance Administration of the United Nations, and making possible improved vital statistics in many countries. The importance of this needs no emphasis, as vital statistics are essential to progress in public health. Canada can be proud of the achievements of the Dominion Bureau of Statistics, and particularly its remarkable accomplishments in the conduct of the 1951 Census.





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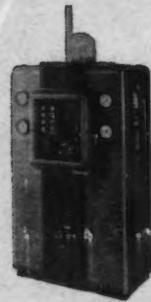
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